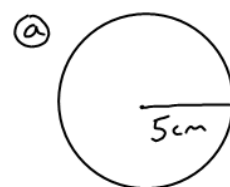


① Find the perimeter



$$P = 16\text{cm}$$

② Find the circumference

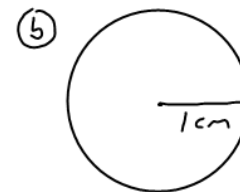


$$C = 2\pi r$$

$$C = 2\pi$$

$$C \approx 31.415$$

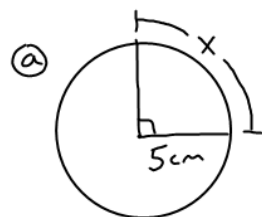
$$C = 10\pi$$



$$C \approx 6.28$$

$$C = 2\pi$$

③ Find the length of x

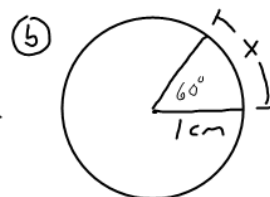


$$C = 10\pi$$

$\frac{1}{4}$ of circle

$\frac{1}{4}$ of C

$$\frac{10\pi}{4} = \frac{5\pi}{2}\text{cm}$$



$$C = 2\pi$$

$$\frac{360}{60} = \frac{2\pi}{x}$$

$$2\pi \cdot \frac{1}{6} = \left(\frac{\pi}{3}\right)$$

$$\frac{60}{360} = \frac{1}{6}$$

④ Solve for x

$$\frac{x}{45} = \frac{\pi}{180}$$

$$x = \pi \cdot 45 \div 180$$

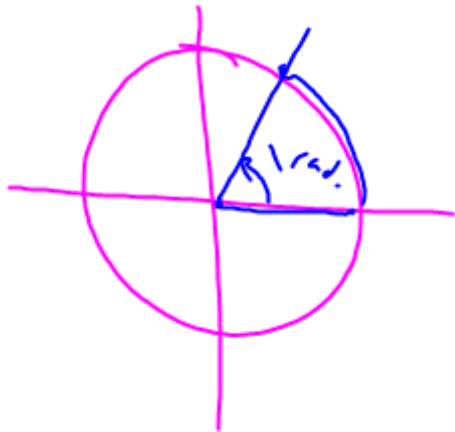
$$x = \frac{45\pi}{180}$$

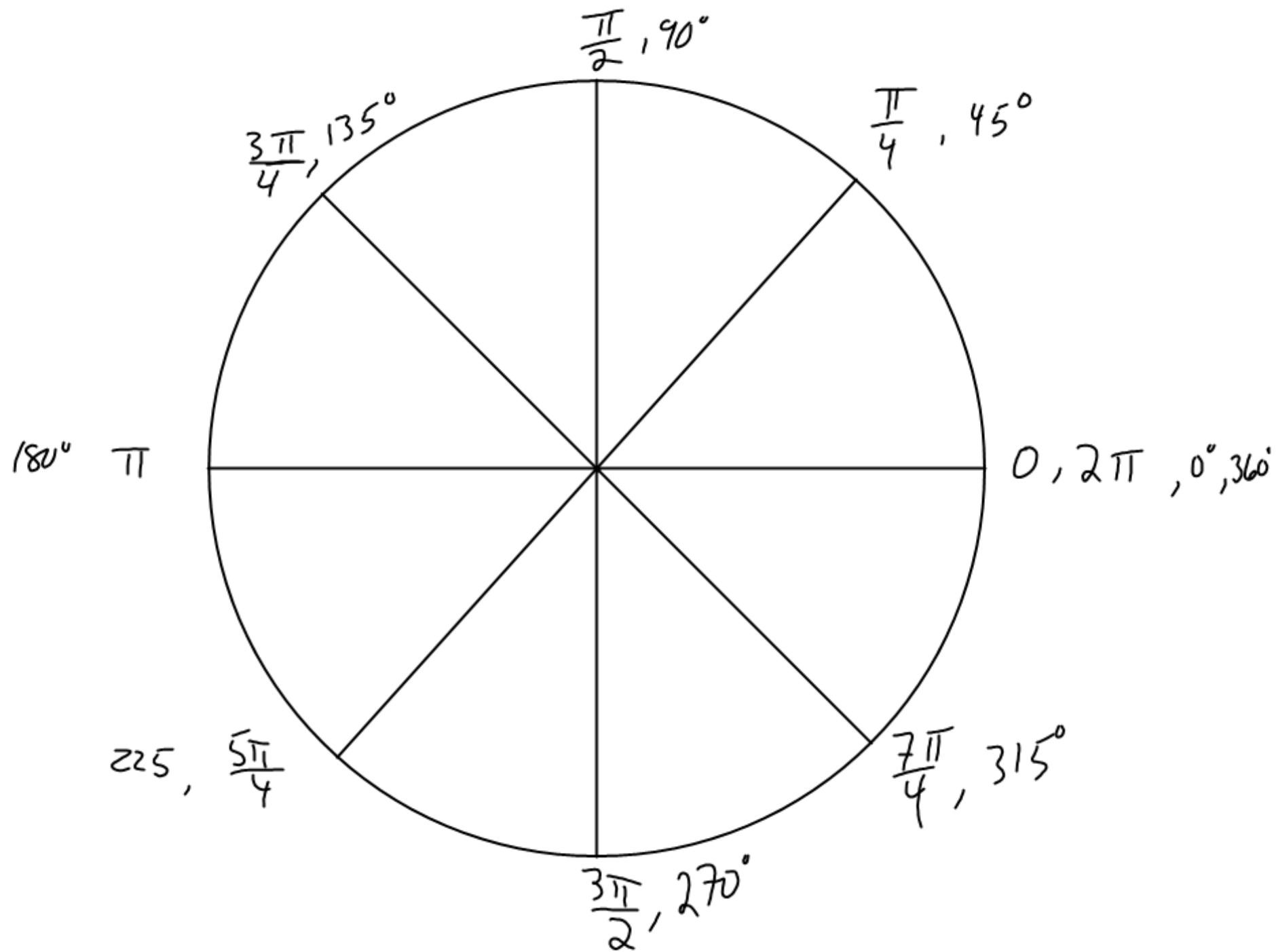
$$x = \left(\frac{\pi}{4}\right)$$

radian \Rightarrow radius

radian measure - a way to measure angles

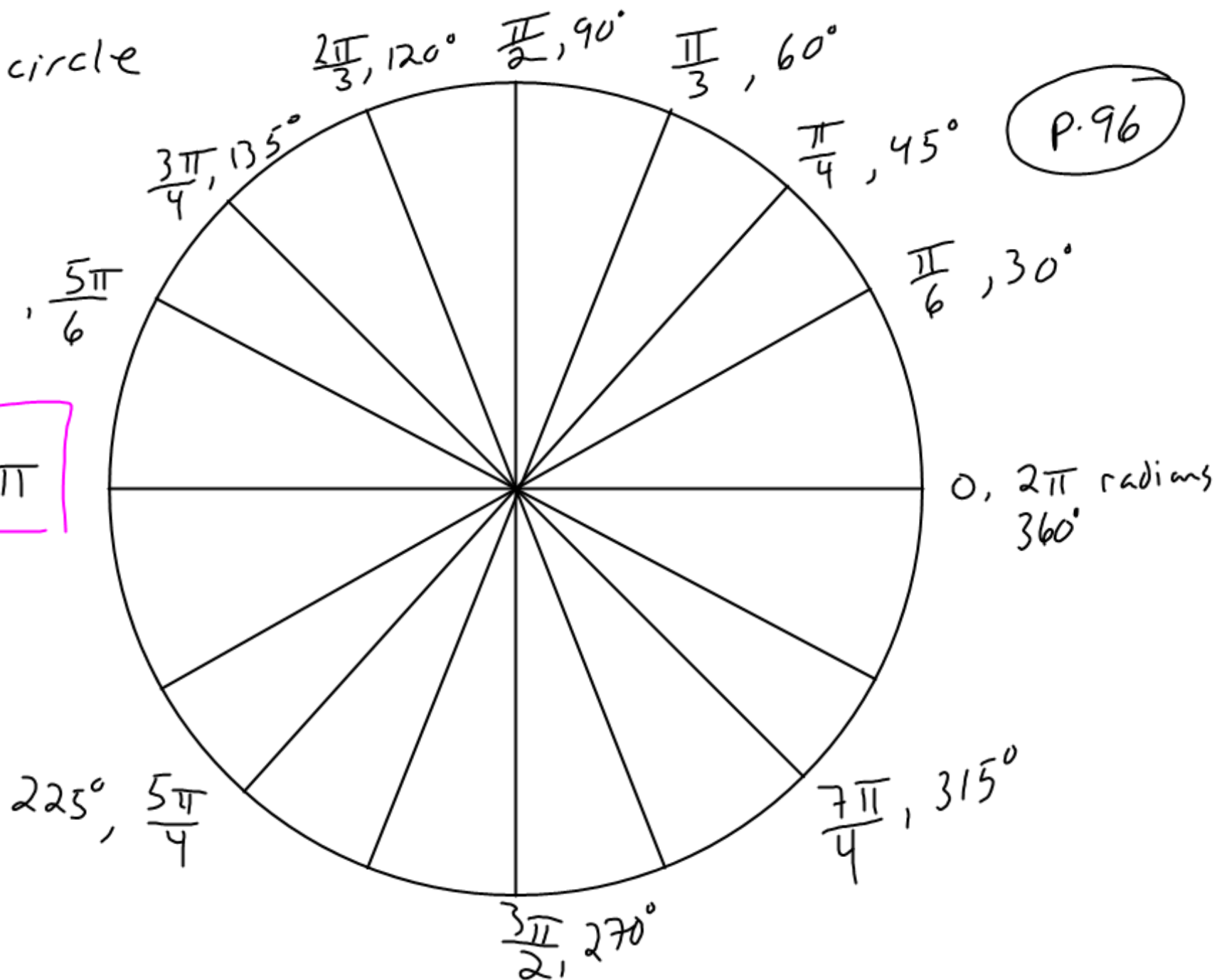
An angle of 1 radian is the angle needed to cut off an arc length equal to 1 radius





Unit circle

P. 96

 $180^\circ, \pi$ 

$45^\circ \rightarrow ? \text{ radians}$

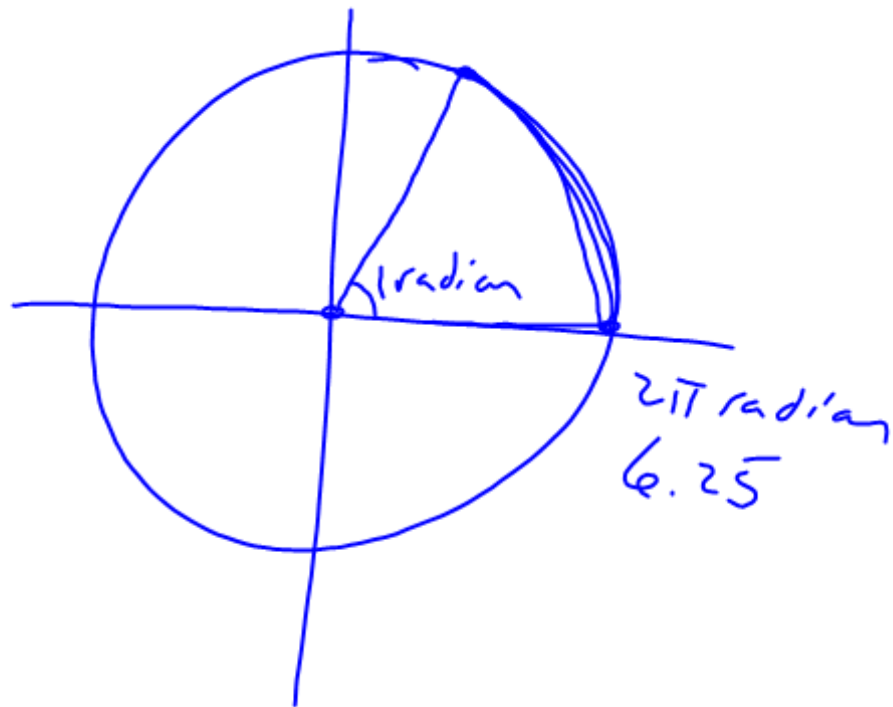
$$\frac{45^\circ}{x \text{ rad}} = \frac{180^\circ}{\pi \text{ rad.}}$$

$$4 \cancel{\text{meters}} \cdot \frac{100 \text{ cm}}{1 \cancel{\text{m}}} = 400 \text{ cm}$$

$$45^\circ \cdot \frac{\pi \text{ radians}}{180} = \frac{45\pi}{180} \text{ radians} = \frac{\pi}{4} \text{ radians}$$

1 radian cuts off an arc equal in length

to 1 radius of the circle



sect. 3.1 # 5-12(3), 17, 21-32(5), 35-46(3),
Exact approx.

55, 56, 57-62, 71, 74, 75